

Geospatial Data Distribution

Who We Are

- APFO is the primary source of aerial imagery for the U.S. Department of Agriculture.
- Data Stewards for NAIP, and historical aerial photography collected for USDA dating back to 1955.

Who We Support

- **USDA**
 - FSA - Compliance and Ortho Imagery
 - NRCS – Conservation
 - USFS – Resource Management
- **Federal, State and Local Governments**
 - Land Management Agencies
 - Emergency Management and Response
- **Commercial**
 - Planning
 - Litigation
 - Environmental
 - Development

How we support

- Provide data warehousing and archive capabilities for USDA.
- Support the implementation and use of GIS in service Centers by acquiring imagery and delivering in a format that is ready to use.
- Provide contracting services to acquire geospatial data sets.

Data Acquisition and Integration

- USDA acquires and integrates data sets for one purpose.
 - To support access and delivery of these data sets for use in meeting the agencies program mission.

Data distribution is

- A means to quickly and efficiently deliver data to our customers
- Accomplished thru:
 - ✓ Media delivery (CD, DVD, Portable Hard Drive)
 - ✓ Web based applications and services
 - ✓ FTP
 - ✓ APFO Sales Department

Distribution Technologies

- Geospatial Data Warehouse
 - Accurate basemaps for the USDA
 - ArcIMS web services
- APFO Data Provisioning System
 - Sales Order Processing
 - Ad-Hoc on demand products
- Geospatial Data Gateway
 - Pre defined products; CCM's and CLU's
- Geospatial One-Stop
 - Searchable Metadata
 - Access to ArcIMS web services

Business Processes

- Flight Planning
- NAIP Contract
- Receive and archive Products
- Product Inspection Process
- Products released for distribution
- Archive NAIP Products to GDW
- Catalog NAIP Products to APFO DPS
- Load 1 meter Products in SDE

Data Access and Delivery

- Access and delivery of geospatial data to service center offices, internal, and external customers in support of business needs encompasses four major ideas:
 - Data warehousing
 - Data selection
 - Packaging
 - Delivery

Data Warehousing

- USDA Implemented Geospatial Data Warehouse (GDW) as part of the Service Center Modernization Initiative.
 - To facilitate archive storage, data access, browsing, retrieval, and use of GIS data.

Data Selection

- APFO Data Provisioning System (DPS)
- Geospatial Data Gateway (GDG)
- Geospatial One-Stop
 - Provide an intuitive web based searching method.
 - Users can find and select data by entering a county name, a place, or use an online mapping tool.

Packaging

- APFO Data Provisioning System
 - Based on application needs users can specify how the image, vector, or tabular data is to be formatted or re-projected.
 - Create custom data sets for specific applications.

Delivery

- APFO Data Provisioning System
 - Depending on the telecommunications capabilities and urgency of the data request, users may select ftp downloading or select to have media delivery.
 - Media Delivery
 - CD/DVD
 - USB hard drive
- OnCoarse delivery from GDW

Geospatial Data Warehouse

Data Management Team Recommendations

- Establish on-line data warehouses at Data Acquisition and Integration Centers (APFO & NCGC). Centers serve as the certified source for data dissemination and on-line applications. Centers are responsible for acquisition, integration, storage, archival, maintenance, and dissemination of geospatial data.
- Establish a common Internet Portal as a “one-stop-shopping” service for geospatial data. The distributed nature of the data appears seamless to users by linking the warehouses through a common Internet portal that provides one-stop-shopping services.

Infrastructure

- Geospatial Data Warehouse
 - Massive data storage architecture
 - More than a Petabyte capacity
 - Servers, storage and software to support CLU and NAIP basemapping
- Data provisioning capability
 - On demand capability to create and deliver custom geospatial data products
 - Integrated large volume RIMAGE CC/DVD burners
 - Integrated media servers for very large image delivery
- Network bandwidth and infrastructure to support the USDA requirements
- Evaluation of new data management and delivery technologies

Business Requirements for the GDW:

- Support Service Center Agencies
 - Authoritative Source for SCA Geospatial Data
 - MDOQ/DOQ Ortho Base imagery
 - NAIP Imagery
 - Common Land Unit
 - Administration and Political Boundaries & Master Reference Themes
 - Custom Delivery of the data
 - Provide Web Services for integration into desktop and web applications
- Support Cost Share Partners
 - Volume Delivery
- Support Federal Mandates
 - Data is in Public Domain
 - FGDC – Geospatial One-Stop
 - eGov
 - GOS

What the GDW Provides:

- Web service access to national MDOQ and NAIP imagery for SCA offices
- Support for a national CLU layer for FSA via replication of the CLU from the field service centers
- APFO in-house NAIP inspection process
- APFO Sales Branch data distribution via APFO Data Provisioning System

How the GDW Supports FSA Farm Programs

- Base information for maintaining CLU boundaries and farm records
- An intuitive base map for interacting with customers
- Disaster assessment prior to and after an event
- Provides authoritative data

APFO GDW Vision

- Integration into the USDA delivery portal, the Geospatial Data Gateway
- Expanded outreach via APFO Data Provisioning System
- More sophisticated web and map services

Web Portal - Geospatial Data Gateway



Overview of the Data Gateway

- Provides a single access point to USDA geospatial data.
- Data sets served are determined by the USDA Service Center GIS strategy.
- Support the development, presentation, and dissemination of information by Service Center field staff working with customers.

Goals and Objectives

- The goals and objectives of access and delivery of geospatial data in the context of GIS Implementation in the Service Centers include:
 - Support more efficient and timely program delivery.
 - Supply greater quantity and variety of products and services for the customer.
 - Improved quality of products and services for the customer.
 - Optimize service center staff access to geospatial data and information.

Geospatial Data Themes

■ Critical Themes

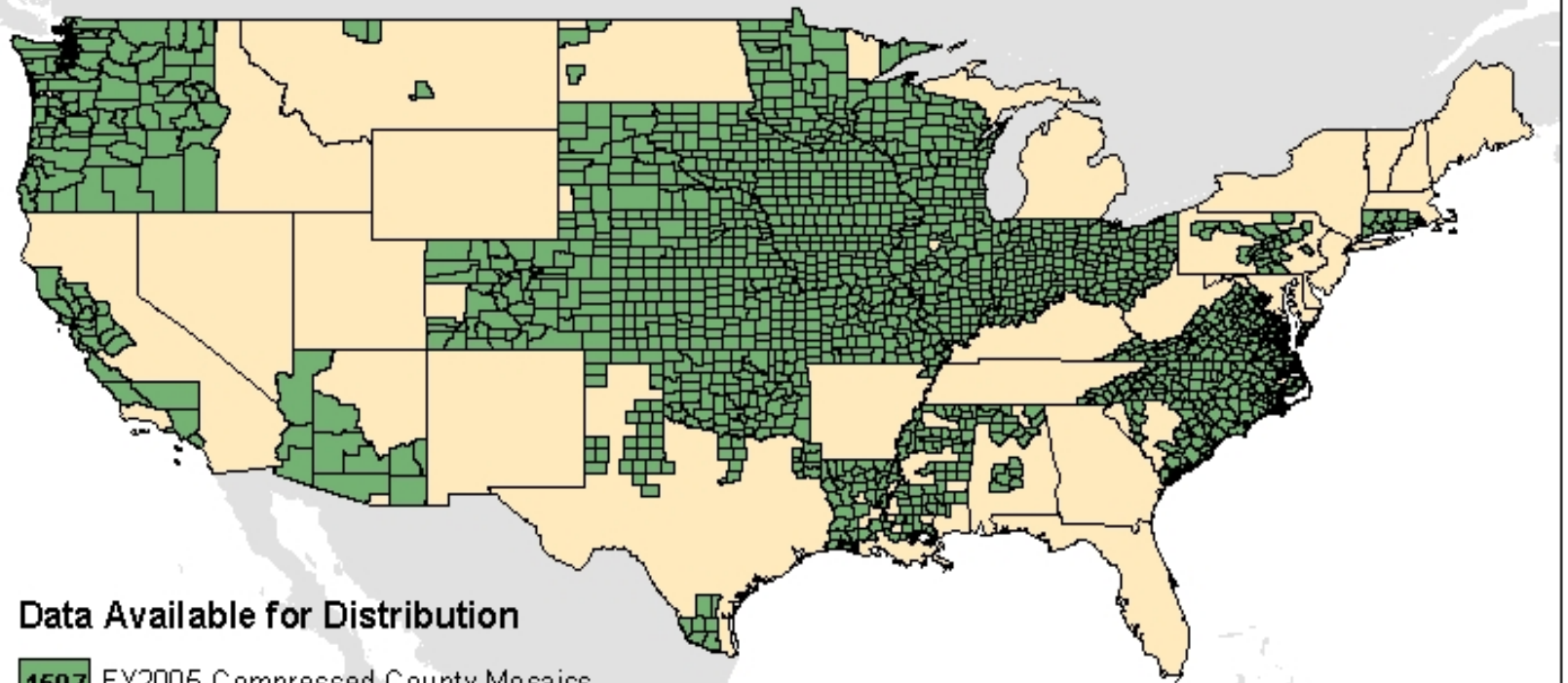
- Ortho imagery
 - NAIP Compressed County Mosaics (CCM)
 - MDOQ Compressed County Mosaics (CCM)
- Common Land Unit (CLU)

NAIP CCM Status Map

U.S. Department of Agriculture

Farm Service Agency

2005 National Ag. Imagery Program Mosaics



Data Available for Distribution

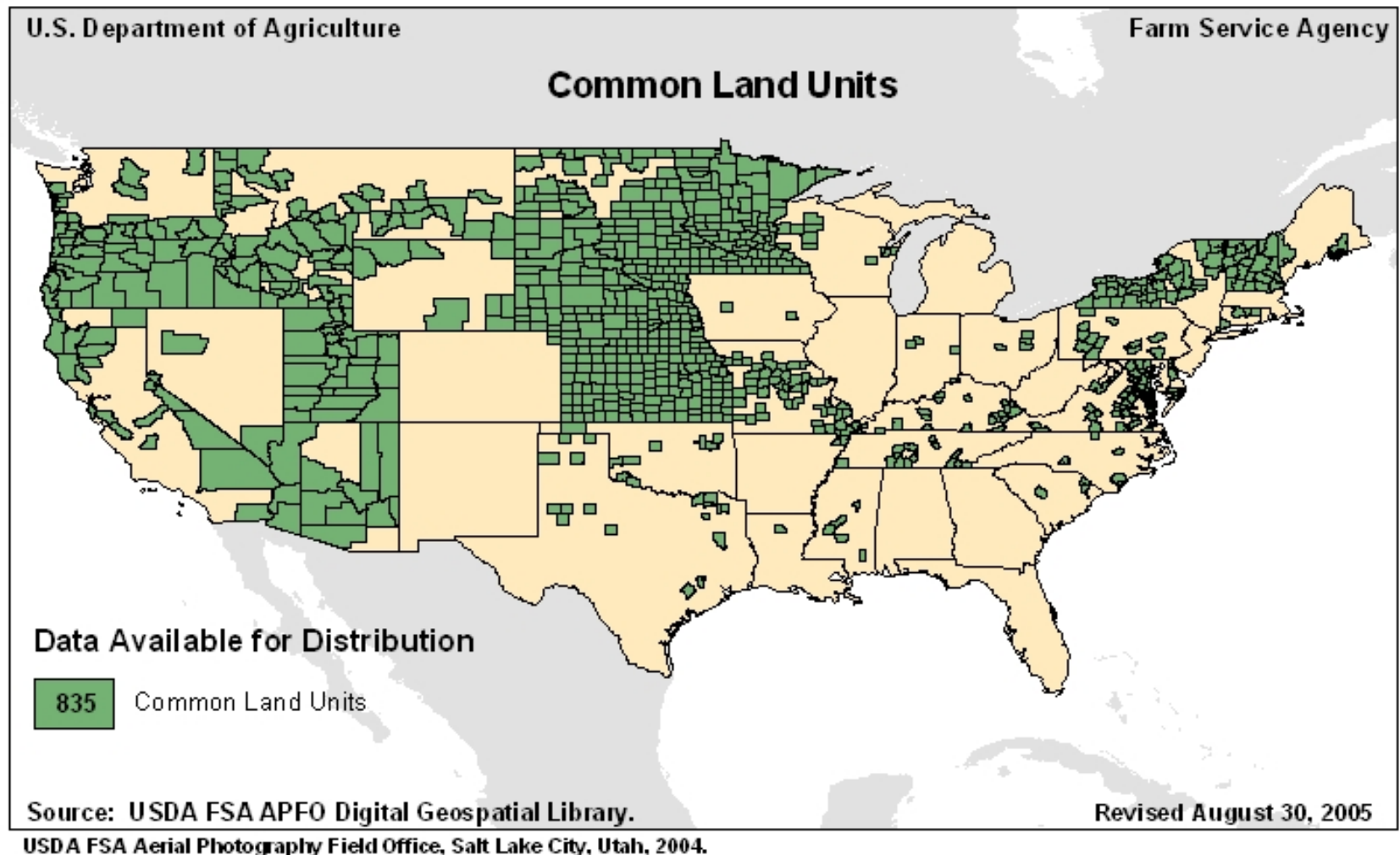
1597 FY2005 Compressed County Mosaics

Source: USDA FSA APFO Digital Geospatial Library.

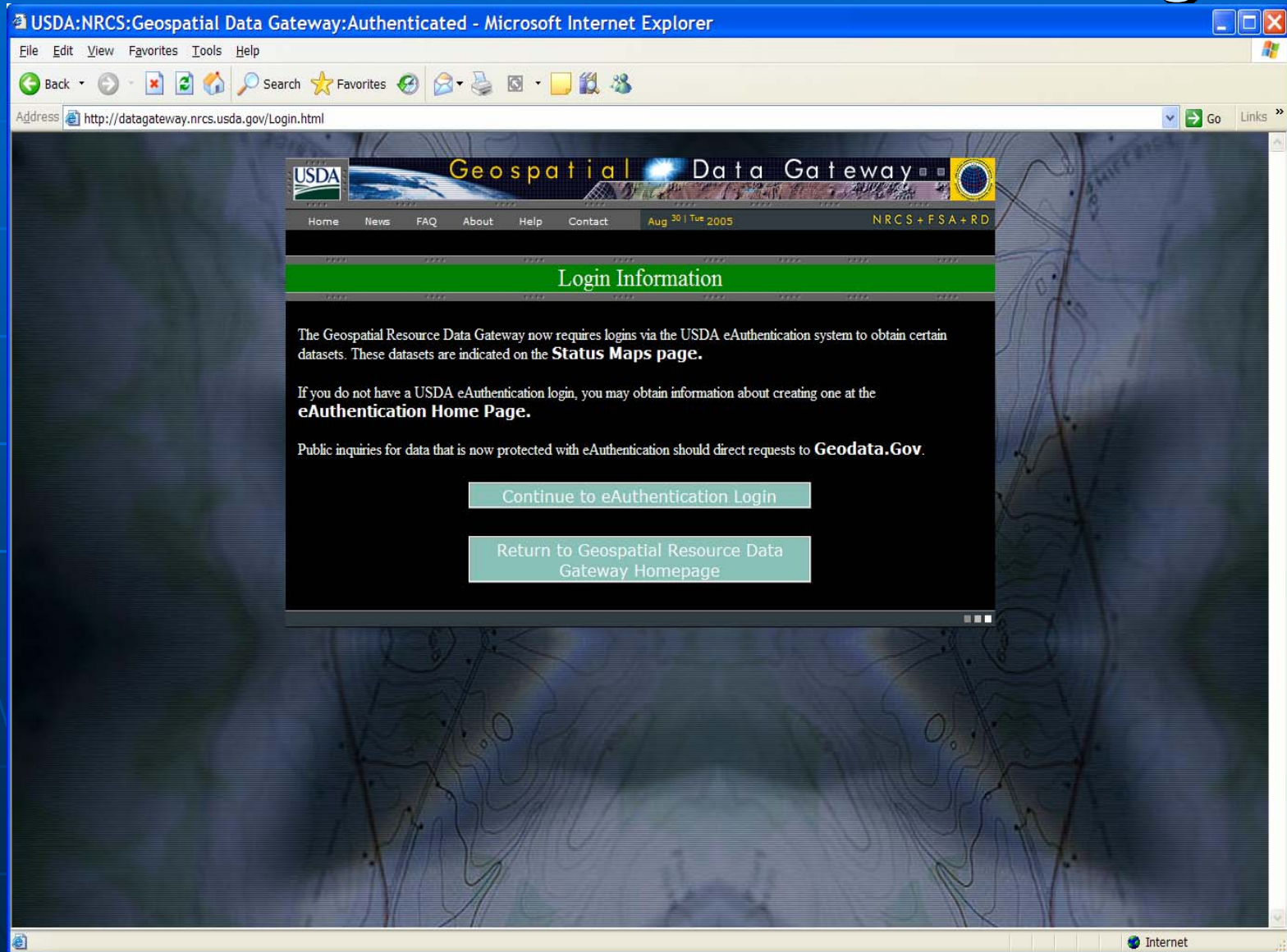
Revised November 26, 2005

USDA FSA Aerial Photography Field Office, Salt Lake City, Utah, 2004.

Certified Common Land Units (CLU)



USDA eAuthentication Login



Aerial Photography Field Office Data Provisioning System

EarthWhere™ | Welcome to EarthWhere™ - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media Print Mail

Address http://199.158.166.107/earthwhere/login.do;jsessionid=C3D859250CD0D4339347386705580920

Links Aerial Photography Field Office - Login APFO Help Desk - Administrative Menu APFO HelpDeskHelp Desk Google HP Web Jetadmin - Application Launcher

USDA United States Department of Agriculture
APFO Data Provisioning System

User: Not Logged In Register To Access The Application

Search
Navigate, Define AOI & Select Data Sources

Define
Define Processing Parameters

Generate
Preview & Generate Products

EarthWhere™ | [Log In / Registration](#) >>> [Log In](#) | [Register For Access](#)

Viewing Requirements

EarthWhere™ Version 3.6.3 requires the following:

[Display]
Minimum Monitor Resolution: 1024x768 display @ 16 bit
Optimum Monitor Resolution: 1280x1024 or larger @ 32 bit

[Browser]
[Internet Explorer](#) Versions 5.5 SP2, 6.0 SP1 or 6.0 SP2
[Netscape Navigator](#) Version 7.02
[Mozilla](#) Version 1.2.1, 1.7.1 or Firefox 1.0 (Linux or Windows)

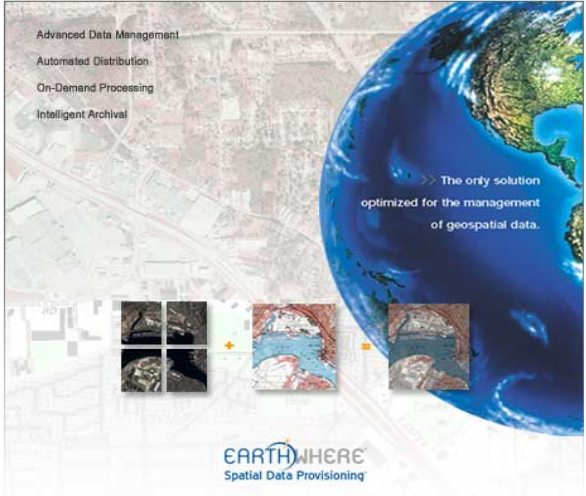
Account Log In

Username:

Password:

Forgotten or misplaced your Username and Password?
Please contact [Tech Support](#) to request assistance.

If you **do not** have an EarthWhere™ Account:
[Click Here to Register.](#)



Advanced Data Management
Automated Distribution
On-Demand Processing
Intelligent Archival

>>> The only solution
optimized for the management
of geospatial data.

EARTHWHERE
Spatial Data Provisioning

Internet

APFO Data Provisioning System

- COTS Application
- Newest version (3.6) developed with APFO requirements in mind.
- Is a software application designed to improve the function of “Provisioning” geospatial imagery, specifically ***remote sensing data-sets***, to end users.
- Provisioning is the process of creating custom derivative raster products from an archive of source imagery
- Search for data, define your output parameters, generate the product and download the result to your application or document
- Creates optimized raster datasets for use in enterprise systems such as ArcSDE/ArcIMS and ArcGIS

APFO Data Provisioning System

- **Provides a “view” into your data holdings**
 - Most Current Data
 - Historical Archive
- **Catalogs**
 - MDOQ, NAIP, CLU, others
- **Approximately 4-5 years of data will be on line**
- **Integrated with the GDW infrastructure**
 - over 1 petabyte capacity

Objectives

- Establish a process to determine coverage and fulfill imagery requests for NAIP quarter quadrangle data using EarthWhere
- Define integration points between imagery request fulfillment process and work order entry system (WOES)
- Incorporate the APFO reference vector grids within EarthWhere
- Integrate the imagery fulfillment process with the Geospatial Data Gateway

Data Access Issues

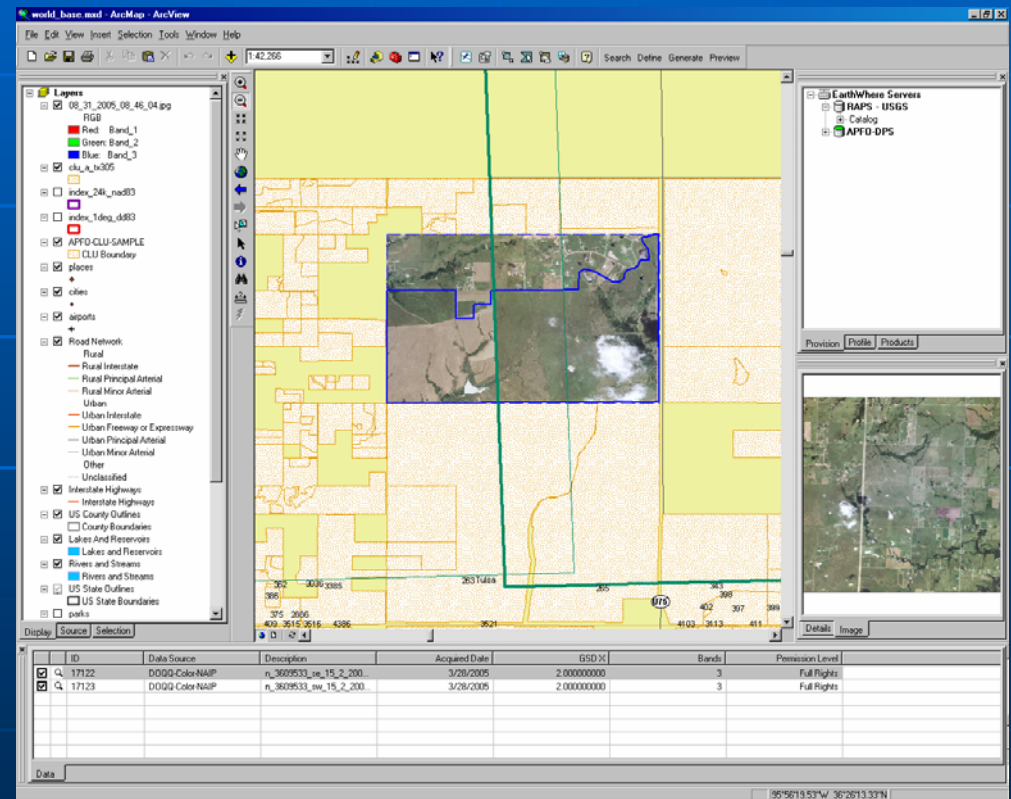
- Majority FSC consumers requesting web map services
- Minority FSC requests will require packaged data delivery
- Special-case bulk orders for cost share partners, and large vendors
- Miscellaneous small order requests for USDA users come via Gateway
- Require fully automated delivery systems for Gateway-type orders
- Order tracking necessary at least for Gateway-type requests

Data Delivery Methods

- **FTP**
- **Media Types**
 - CD, DVD, Portable Hard Drive
- **Output Directory**
- **Symbolic links for local data access**

DPS Capability Under Evaluation

- Raster Connect for ArcGIS
- Provision directly from the DPS into ArcGIS



In Closing

- APFO available to assist SCA as needed
- Accounts must be requested in advance
- Web based - no additional software needed
- Future integrations
 - Large orders
 - Non-contiguous orders
 - FCGC Compliant Metadata for custom provisioned products
- Funding Support
 - Data Storage
 - Data Access and Delivery